

IN THE CLAIMS

Presented below is a complete listing of all the claims are permitted by the PTO waiver of 37 CFR 1.121 (see Pre-OG Notice 1/31/03).

1. (Currently Amended) A method for cell replication comprising:
receiving a request for data transmission through a crossbar and a corresponding mapping information, the mapping information received by the crossbar and received from one of a plurality of software configurable ~~slot-remap~~ registers, the mapping information indicative of a destination slot and a backup destination slot to which the data is to be transmitted; and

replicating the data by transmitting the data to the destination slot and to the backup destination slot when the data arrives at an input slot of the crossbar.

2. (Original) The method of claim 1 further comprising determining whether the destination slot and the backup destination slot to grant the request are available, the availability determined by a scheduler.

3. (Original) The method of claim 2 further comprising transmitting a control signal to the crossbar once availability is confirmed, the control signal transmitted by the scheduler and indicative of the availability of the destination slot and the backup destination slot.

4. (Original) The method of claim 3 further comprising sending an acknowledgment back to a source of the request.

5. (Original) An apparatus for cell replication comprising:
a crossbar to direct data traffic; and
a scheduler coupled to the crossbar, the scheduler comprising a plurality of signal inputs and a plurality of signal outputs and configured to provide control signals to the crossbar, the plurality of signal inputs being requests for data transmission through the crossbar, and the plurality of signal outputs being grants to the requests, data for which a request for transmission is granted by the scheduler is replicated and processed through the crossbar to a destination slot and to a backup destination slot according to software configurable mapping information.

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6. (Original) The apparatus of claim 5 wherein the crossbar is further comprised of a plurality of data in signals and a plurality of data out signals and is a spatial crossbar.

7. (Currently Amended) The apparatus of claim 6 further comprising a plurality of ~~slot-remap~~ registers coupled to the crossbar and the scheduler, the plurality of ~~slot-remap~~ registers being software configurable and configured to provide the mapping information to the crossbar and the scheduler, the mapping information identifies the data out destination slots of the crossbar to which data is to be transmitted through the crossbar.

8. (Currently Amended) The apparatus of claim 7 wherein each the plurality of ~~slot-remap~~ registers corresponds with one of the plurality of data in signals of the crossbar.

9. (Currently Amended) The apparatus of claim 8 wherein each the plurality of ~~slot-remap~~ registers corresponds with a sequential one of the plurality of data in signals of the crossbar.

10. (Currently Amended) The apparatus of claim 8 wherein the scheduler receives mapping information indicative of the destination slot and the backup destination slot from the ~~slot-remap~~ register when a request comes in to one of the plurality of input slots.

11. (Original) The apparatus of claim 10 wherein the scheduler determines whether the destination slot and the backup destination slot as identified by the mapping information for the specific input slot are available.

12. (Original) The apparatus of claim 11 wherein the scheduler transmits a control signal to the crossbar which indicates that data in slot is permitted to send a cell to its intended the destination slot and the backup destination slot once the availability is confirmed.

13. (Original) The apparatus of claim 12 wherein the scheduler sends an acknowledgment back to a source of the request.

14. (Cancelled)

15. (Currently Amended) [The system of claim 14] A network switch system

comprising:

a plurality of processor cards comprising a central processing unit and high level

software;

a plurality of switch cards coupled to the plurality of processor cards and
implemented with a cell replication feature, the plurality of switch cards comprised of a
plurality of switch planes; and

a plurality of line cards coupled to the plurality of switch cards, the plurality of
line cards to interface the plurality of switch cards with traffic coming in and out of a
plurality of physical ports, wherein the cell replication feature further comprises:

a crossbar to direct data traffic; and

a scheduler coupled to the crossbar, the scheduler comprising a plurality of signal inputs and a plurality of signal outputs and configured to provide control signals to the crossbar, the plurality of signal inputs being requests for data transmission through the crossbar, and the plurality of signal outputs being grants to the requests, data for which a request for transmission is granted by the scheduler is replicated and processed through the crossbar to a destination slot and to a backup destination slot according to software configurable mapping information.

16. (Original) The system of claim 15 wherein the crossbar is further comprised of a plurality of data in signals and a plurality of data out signals and is a spatial crossbar.

17. (Currently Amended) The system of claim 16 further comprising a plurality of ~~slot-remap~~ registers coupled to the crossbar and the scheduler, the plurality of ~~slot-remap~~ registers being software configurable and configured to provide the crossbar and the scheduler the mapping information which identifies the data out destination slots of the crossbar to which data is to be transmitted through the crossbar.

18. (Currently Amended) The system of claim 17 wherein each the plurality of ~~slot-remap~~ registers corresponds with one of the plurality of data in signals of the crossbar.

19. (Currently Amended) The system of claim 18 wherein each the plurality of ~~slot-remap~~ registers corresponds with a sequential one of the plurality of data in signals of the crossbar.

20. (Currently Amended) The system of claim 19 wherein the scheduler receives mapping information indicative of the destination slot and the backup destination slot from the ~~slot-remap~~ register when a request comes in to one of the plurality of input slots.

21. (Original) The system of claim 20 wherein the scheduler determines whether the destination slot and the backup destination slot as identified by the mapping information for the specific input slot are available.

22. (Original) The system of claim 21 wherein the scheduler transmits a control signal to the crossbar which indicates that data in slot is permitted to send a cell to its intended the destination slot and the backup destination slot once the availability is confirmed.

23. (Original) The system of claim 22 wherein the scheduler sends an acknowledgment back to a source of the request.

24. (Previously Amended) An apparatus for cell replication comprising:
means for directing data traffic; and
means for controlling the means for directing, the means for controlling coupled to the means for directing comprising a plurality of signal inputs and a plurality of signal outputs and configured to provide control signals to the means for directing, the plurality of signal inputs being requests for data transmission through the means for directing, and the plurality of signal outputs being grants to the requests, data for which a request for transmission is granted by the means for controlling is replicated and processed through the means for directing to a destination slot and to a backup destination slot according to software configurable mapping information.

25. (Original) The apparatus of claim 24 wherein the means for directing is further comprised of a plurality of data in signals and a plurality of data out signals and is a spatial crossbar.

26. (Original) The apparatus of claim 25 further comprising a plurality of means for storing coupled to the means for directing and the means for controlling, the plurality of means for storing being software configurable and configured to provide the mapping information to the means for directing and the means for controlling, the mapping information identifies the data out destination slots of the means for directing to which data is to be transmitted through the means for directing.

27. (Original) The apparatus of claim 26 wherein each the plurality means for storing corresponds with one of the plurality of data in signals of the means for directing.

28. (Original) The apparatus of claim 27 wherein each the plurality means for storing corresponds with a sequential one of the plurality of data in signals of the means for directing.

29. (Original) The apparatus of claim 28 wherein the means for controlling receives mapping information indicative of the destination slot and the backup destination slot from the means for storing when a request comes in to one of the plurality of input slots.

30. (Original) The apparatus of claim 29 wherein the means for controlling determines whether the destination slot and the backup destination slot as identified by the mapping information for the specific input slot are available.

31. (Original) The apparatus of claim 30 wherein the means for controlling transmits a control signal to the means for directing which indicates that data in slot is permitted to send a cell to its intended the destination slot and the backup destination slot once the availability is confirmed.

32. (Original) The apparatus of claim 31 wherein the means for controlling sends an acknowledgment back to a source of the request.

33. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

receiving a request for data transmission through a crossbar and a corresponding mapping information, the mapping information received by the crossbar and received from one of a plurality of software configurable ~~slot-remap~~ registers, the mapping information indicative of a destination slot and a backup destination slot to which the data is to be transmitted; and

replicating the data by transmitting the data to the destination slot and to the backup destination slot when the data arrives at an input slot of the crossbar.

34. (Previously Added) The machine readable medium of claim 33 further comprising determining whether the destination slot and the backup destination slot to grant the request are available, the availability determined by a scheduler.

35. (Previously Added) The machine readable medium of claim 34 further comprising transmitting a control signal to the crossbar once availability is confirmed, the control signal transmitted by the scheduler and indicative of the availability of the destination slot and the backup destination slot.

36. (Previously Added) The machine readable medium of claim 35 further comprising sending an acknowledgment back to a source of the request.
